

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

REMARKS

Claims 1-11 are all the claims presently pending in the application. Claims 1, 4, 5, 8, 10 and 11 have been amended to more particularly define the invention.

It is noted that the claim amendments herein or later are not made to distinguish the invention over the prior art or narrow the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein or later should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

With respect to the prior art rejections, claims 1-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Iwata et al. in view of Itokawa et al. (U.S. Patent No. 6,577,062) and further in view of Akiba (U.S. Publication No. 2002/0171361). Claims 3 and 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Itokawa et al. and Akiba in further view of Kim et al. (U.S. Patent No. 6,603,260).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the invention, as recited in claim 1, is directed to a partition wall for a plasma display panel including an insulation layer covering an external surface of the partition wall, the partition wall being made of metal, a transverse wall extending in a row direction to define a partition between unit light-emission areas adjacent to each other between two substrates of the plasma display panel in a column direction, and a groove portion formed in at least one of a front-facing face and a back face of the transverse wall.

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

Another aspect of the invention, as recited in claim 8, is directed to a partition wall for a plasma display panel including an insulation layer covering an external surface of the partition wall, the partition wall being made of metal, a transverse wall extending in a row direction to define a partition between unit light-emission areas adjacent to each other between two substrates of the plasma display panel in a column direction, and a rod-shaped dielectric extending in the row direction and integrally mounted on the transverse wall

A further aspect of the invention, as recited in claim 10, is directed to a plasma display panel including a partition wall, made of metal, provided between two substrates and having an external surface covered by an insulation layer, a transverse wall for defining a partition between unit light-emission areas adjacent to each other in a column direction, and a groove portion formed in at least one of a front-facing face and a back face of the transverse wall.

Yet another aspect of the invention, as recited in claim 11, is directed to a plasma display panel including a partition wall, made of metal, provided between two substrates and having an external surface covered by an insulation layer, a transverse wall for defining a partition between unit light-emission areas adjacent to each other in a column direction, and a rod-shaped dielectric extending in a row direction and integrally mounted on the transverse wall.

In a conventional plasma display panel (PDP), the partition wall 6 for partitioning the discharge space into the discharge cells C is generally formed of electric insulation materials.

For example, a partition-wall material such as a glass paste is coated in a thick film on the back glass substrate 4, then dried. After that, the resulting partition-wall materials is cut into a grid pattern by a sandblasting process using a mask of a predetermined pattern, and then is

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

burned to form the partition wall 6. (See Application at Figures 1 and 2, and page 3, lines 8-15 and page 4, line 1) However, the conventional method of forming the partition wall by use of sandblasting involves a complicated manufacturing process and therefore gives rise to the problem of a low level of productivity and increased manufacturing costs. (See Application at page 3, lines 16-19)

For this reason, instead of the conventional partition wall obtained by forming the insulation material, using a metal-made partition wall covered by an insulation layer has been considered. (See Application at page 3, lines 20-22) However, using a metallic partition wall in the PDP gives rise to the problem of an increase in the electrostatic capacity in the panel and an increase in reactive power associated therewith, leading to an increase in electrical power consumption. Hence, the use of metallic partition wall is not commercially practical at present. (See Application at page 3, lines 23-27 and page 4, line 1)

On the other hand, when a partition wall made of metal for a PDP, according to the claimed invention, is used for partitioning a discharge space defined between a front glass substrate and a back substrate of a PDP, the electrostatic capacity which is produced in a non-display area of a PDP when a metal-made partition wall is used is reduced. Hence, the occurrence of reactive power during driving of the PDP is suppressed. (See Application at page 4, lines 16-23; page 5, lines 15-22; page 6, lines 14-20; and page 7, lines 9-16)

The use of the partition wall of the claimed invention offers a reduction in the electrostatic capacity produced between the row electrode on the front glass substrate and the column electrode on the back glass substrate which are opposite each other with the discharge space in between to allow for generation of an addressing discharge, and therefore reactive

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

power occurring when the addressing discharge is generated is effectively suppressed. (See Application at page 4, lines 24-27 and page 5, lines 1-3)

II. THE PRIOR ART REFERENCES

A. The Itokawa et al. Reference

Itokawa et al. discloses a plasma display panel wherein non-discharge spaces are provided in barrier ribs formed on a rear substrate and black material layers functioning as black stripes are formed in cavities corresponding to non-discharge spaces. (See Itokawa et al. at Abstract)

However, the Examiner concedes on page 3, lines 6-7 of the Office Action that Itokawa et al. does not teach or suggest “*an insulation layer covering an external surface of the partition wall [and] the partition wall comprising metal,*” as recited in independent claim 1. Independent claims 8, 10 and 11 contain similar language.

Further, Itokawa et al. does not teach or suggest “*a groove portion formed in at least one of a front-facing face and a back face of the transverse wall,*” as recited in claims 1-3, 6-7 and 10. Claim 9 contains similar language.

Instead, Itokawa et al. discloses that the “stripe barrier ribs 10 have a split pattern [having] non-discharge cavities 10c formed in channels between adjacent split portions 10a and 10b of the barrier ribs 10.” (See Itokawa et al. at Figure 2 and column 3, lines 23-26) Alternatively, Itokawa et al. discloses that “each of the barrier ribs 13 consists of barrier rib strips 13’ and 13’’ which are split up in a ladder pattern [and] non-discharge cavities 14 are

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

provided the adjacent barrier rib strips.” (See Itokawa et al. at Figures 3 and 5, and column 4, lines 43-47) (See also Itokawa et al. at Figure 6 and column 5, lines 60-65)

Clearly, Itokawa et al. does not teach or suggest a groove in at least one of an upper and lower surface of the partition wall, as claims 1-3, 6-7, 9 and 10. Rather, Itokawa et al. discloses a slot that divides the barrier ribs 10,13,23 of Itokawa et al. into two separate parts. In fact, Itokawa et al. makes no reference or suggestion to a groove in the barrier ribs or to the desirability or benefit of providing such a feature.

Clearly, there are elements of the claimed invention that are not taught or suggested by Itokawa et al.

B. The Akiba Reference

The Examiner alleges that Itokawa et al. would have been combined with Akiba to form the inventions defined in claims 1-11. However, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Akiba discloses a plasma display panel discloses a plurality of partition walls disposed between the front plate and the back plate of the display panel. (See Akiba at Abstract)

Applicant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

In fact, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination.

Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner and, therefore, the Examiner has failed to make a prima facie case of obviousness.

As noted above, the Examiner concedes that Itokawa et al. does not teach or suggest *"an insulation layer covering an external surface of the partition wall [and] the partition wall comprising metal,"* as recited in independent claim 1. Independent claims 8, 10 and 11 contain similar language. Rather, the Examiner attempts to rely on Akiba to make up for the deficiencies of Itokawa et al.

Applicant notes that the Examiner further concedes on page 5 of the Office Action that neither Itokawa et al., nor Akiba, nor any combination thereof teaches or suggests that *"[the] groove portion is intermittently formed in the row direction,"* as recited in claim 3, or that *"[the] groove portion is a slot passing through the transverse wall from the front-facing face to the back face and intermittently formed in the row direction,"* as recited in claim 5.

Notwithstanding, Applicant respectfully submits that since the barrier ribs of Itokawa et al. are made of insulation material and not of metal, Itokawa et al. does not indicate or suggest the problems created by the use of a metal partition wall. Further, the non-discharge cavities 10c,14,17,26 of Itokawa et al. are not for solving the problem which a metal partition wall possess, namely the increase in electrostatic capacity in the panel and the increase in reactive power associated therewith. Rather, the discharge spaces have a black material layer

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

12,18,27 deposited therein so that the overall reflection of external light in the panel is reduced in order to improve contrast. (See Itokawa et al. at column 4, lines 17-21)

Additionally, since Akiba's plasma display panel is one wherein a display electrode (Y electrode) 17 and an address electrode (A electrode) 15 are disposed on the same glass substrate 13, the problem of the increase in electrostatic capacity in the panel when using a metal partition wall, stated in the present application, does not occur.

Therefore, Applicant submits that there is no motivation or suggestion in the references to urge the combination alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination

Further, Akiba does not make up for the deficiencies of Itokawa et al. recited above directed toward "*a groove portion formed in at least one of a front-facing face and a back face of the transverse wall,*" as recited in claims 1-3, 6-7 and 10, and similarly in claim 9.

Therefore, even assuming arguendo that Akiba may disclose that an insulation layer covering an external surface of the partition wall and the partition wall comprising metal, as alleged by the Examiner, there is no teaching or suggestion in Akiba of a groove portion formed in the partition wall to reduce the electrostatic capacity which is produced in the non-display area of a PDP when metal partition walls are used, as in claims 1-3, 6-7, 9 and 10. Indeed, Akiba does not even recognize the desirability or benefit of providing such a feature. Therefore, Akiba clearly does not make up for the deficiencies of Itokawa et al. with respect to claims 1-3, 6-7, 9 and 10.

In light of the above, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

C. The Kim et al. Reference

The Examiner alleges that the combination of Itokawa et al. and Akiba would have been combined with Kim et al. to form the invention defined in claims 3 and 5. However, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Kim et al. discloses a plasma display panel having a getter layer formed of at least a portion of a barrier rib. (See Kim et al. at Abstract)

Applicant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination.

Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner and, therefore, the Examiner has failed to make a prima facie case of obviousness.

The Examiner concedes that neither Itokawa et al., nor Akiba, nor any combination thereof teaches or suggests that “[the] groove portion is intermittently formed in the row

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

direction,” as recited in claim 3, or that “[the] groove portion comprises a slot passing through the transverse wall from the front-facing face to the back face and intermittently formed in the row direction,” as recited in claim 5. Rather, the Examiner attempts to rely on Kim et al. to make up for the deficiencies of Itokawa et al. and Akiba.

However, this feature is not taught or suggested by Kim et al. In fact, nowhere do the passages or figures cited by the Examiner teach or suggest that a groove portion is intermittently formed in the row direction. In fact, Kim et al. does not teach or suggest a groove portion in the partition wall in any manner.

Kim et al. discloses a getter layer 1 formed at the barrier rib B. Kim et al. teaches that the getter layer 1 may be formed by dispersing getter material particles in an insulating material (See Kim et al. at Figures 3 and 4, and column 4, lines 51-56). The getter layer 1 may be separately formed at every unit discharge cell A about the barrier rib B (See Kim et al. at Figure 6 and column 4, lines 61-65). Kim et al. also discloses that the getter layer 1 may be formed at every other cell A (See Kim et al. at Figure 7 and column 4, line 66 through column 5, line 5).

However, Kim et al. does not teach or suggest that the barrier rib B may include a groove of any sort. Kim et al. certainly does not teach or suggest that the barrier rib B may include a groove portion intermittently formed in the row direction.

The Examiner alleges that the getter layer 1 of Kim et al. teaches or suggests the grooved portion of the claimed invention. However, as noted by the Examiner, the purpose of a getter layer 1 of Kim et al. is to remove impurities from the discharge gas. (See Kim et al. at column 2, lines 66 through column 3, line 2) As noted above, the grooved portion of

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

the claimed invention reduces the electrostatic capacity which is produced in the non-display area of a PDP when metal partition walls are used. Clearly, the getter layer 1 is not analogous to a groove of any sort, and certainly not to the claimed grooved portion.

Further, Kim et al. does not make up for the deficiencies of Itokawa et al. and Akiba recited above directed toward “*a groove portion formed in at least one of a front-facing face and a back face of the transverse wall,*” as recited in claim 3.

Therefore, even assuming arguendo that Kim et al. may disclose that the getter layer may be intermittently formed in the row direction, as alleged by the Examiner, there is no teaching or suggestion in Kim et al. of a groove portion formed in the partition wall to reduce the electrostatic capacity which is produced in the non-display area of a PDP when metal partition walls are used, as in claims 3 and 5. Indeed, Kim et al. does not even recognize the desirability or benefit of providing such a feature. Therefore, Kim et al. clearly does not make up for the deficiencies of Itokawa et al. and Akiba with respect to claims 3 and 5.

In light of the above, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of claim 3 and 5. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-28, all the claims presently pending in the application, are patentably distinct over the prior art of record and are

Serial No.: 10/682,434
Docket No.: 03-33 PHUS
EBI.013

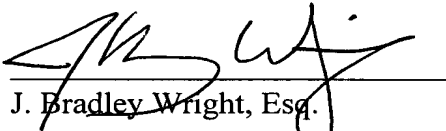
allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 11/23/05


J. Bradley Wright, Esq.
Registration No. 47,188

Sean M. McGinn, Esq.
Registration No. 34,386

**McGINN INTELLECTUAL PROPERTY
LAW GROUP, PLLC**
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254